

WHAT IS CLAIMED IS:

1. A high-Q inductor for high frequency, wherein ~~one~~^{the} inductor has a plurality of inductor elements formed in a plurality of IC wiring layers respectively, and the directions of magnetic fields generated by the respective inductor elements are substantially the same.

2. A high-Q inductor for high frequency according to claim 1, wherein the plurality of inductor elements are connected in series.

3. A high-Q inductor for high frequency according to claim 1, wherein the plurality of inductor elements are connected in parallel.

4. A high-Q inductor for high frequency according to claim 1, wherein the plurality of inductor elements include a serial-connected circuit portion and a parallel-connected circuit portion.

5. A high-Q inductor for high frequency according to claim 1, wherein at least one of the inductor elements is in a meander shape or a spiral shape.

6. A high-Q inductor for high frequency according

to claim 1, wherein a connection between the plurality of inductor elements is formed in an interlayer film disposed between the IC wiring layers in which the inductor elements are formed.

7. A high-Q inductor for high frequency according to claim 2, wherein a connection between the plurality of inductor elements is formed in an interlayer film disposed between the IC wiring layers in which the inductor elements are formed.

8. A high-Q inductor for high frequency according to claim 3, wherein a connection between the plurality of inductor elements is formed in an interlayer film disposed between the IC wiring layers in which the inductor elements are formed.

9. A high-Q inductor for high frequency according to claim 4, wherein a connection between the plurality of inductor elements is formed in an interlayer film disposed between the IC wiring layers in which the inductor elements are formed.

10. A high-Q inductor for high frequency according to claim 5, wherein a connection between the plurality of

inductor elements is formed in an interlayer film disposed between the IC wiring layers in which the inductor elements are formed.

11. A high-Q inductor for high frequency according to claim 1, wherein a drawing interconnect from the inductor element is formed in the IC wiring layer in which one of the inductor elements is formed.

12. A high-Q inductor for high frequency according to claim 11, wherein the plurality of inductor elements are in a spiral shape respectively and connected in parallel with each other, and one of the drawing interconnect is connected to a spiral center of the inductor element and drawn externally by being formed in one of the IC wiring layers, and

the spiral-shaped inductor element formed in the IC wiring layer used for the external drawing is cut off at positions where the drawing interconnect crosses, and cut-off ends of the inductor element are connected with each other by being connected with respective corresponding portions of the spiral-shaped inductor element formed in another one of the IC wiring layers.

13. A high-Q inductor for high frequency according

to claim 1, wherein a drawing interconnect from the inductor element is formed in a wiring layer which is different from the IC wiring layers in which the inductor elements are formed.

14. A high-Q inductor for high frequency according to claim 2, wherein a drawing interconnect from the inductor element is formed in a wiring layer which is different from the IC wiring layers in which the inductor elements are formed.

15. A high-Q inductor for high frequency according to claim 3, wherein a drawing interconnect from the inductor element is formed in a wiring layer which is different from the IC wiring layers in which the inductor elements are formed.

16. A high-Q inductor for high frequency according to claim 4, wherein a drawing interconnect from the inductor element is formed in a wiring layer which is different from the IC wiring layers in which the inductor elements are formed.

17. A high-Q inductor for high frequency according to claim 5, wherein a drawing interconnect from the

inductor element is formed in a wiring layer which is different from the IC wiring layers in which the inductor elements are formed.

18. A high-Q inductor for high frequency according to claim 13, wherein a drawing interconnect and the inductor element to be connected with the drawing interconnect are connected via an connection formed in an interlayer film disposed between a wiring layer in which the drawing interconnect is formed and the IC wiring layer in which the inductor element is formed.

19. A high-Q inductor for high frequency according to claim 14, wherein a drawing interconnect and the inductor element to be connected with the drawing interconnect are connected via an connection formed in an interlayer film disposed between a wiring layer in which the drawing interconnect is formed and the IC wiring layer in which the inductor element is formed.

20. A high-Q inductor for high frequency according to claim 15, wherein a drawing interconnect and the inductor element to be connected with the drawing interconnect are connected via an connection formed in an interlayer film disposed between a wiring layer in which

the drawing interconnect is formed and the IC wiring layer in which the inductor element is formed.

21. A high-Q inductor for high frequency according to claim 16, wherein a drawing interconnect and the inductor element to be connected with the drawing interconnect are connected via an connection formed in an interlayer film disposed between a wiring layer in which the drawing interconnect is formed and the IC wiring layer in which the inductor element is formed.

22. A high-Q inductor for high frequency according to claim 17, wherein a drawing interconnect and the inductor element to be connected with the drawing interconnect are connected via an connection formed in an interlayer film disposed between a wiring layer in which the drawing interconnect is formed and the IC wiring layer in which the inductor element is formed.

23. A high-Q inductor for high frequency according to claim 1, wherein the plurality of inductor elements are in a spiral shape respectively,

adjacent inductor elements of the plurality of inductor elements are connected with each other in such manner that the adjacent inductor elements are serially

connected by connecting the spiral centers thereof with each other and outer ends thereof with each other,

spiral directions of the adjacent inductor elements are in reverse from each other, and

directions of the magnetic fields generated by the respective inductor elements are substantially the same.

24. A high-Q inductor for high frequency according to claim 1, wherein the plurality of inductor elements are in a spiral shape respectively ,

the plurality of inductor elements are alternately connected with each other in such manner that the inductor elements are serially connected by connecting the centers thereof with each other and outer ends thereof with each other,

the spiral directions of adjacent inductor elements repeats the same and the reverse in order, and

the directions of the magnetic fields generated by the respective inductor elements are substantially the same.